Calculation No.	Project No. / Project Name			
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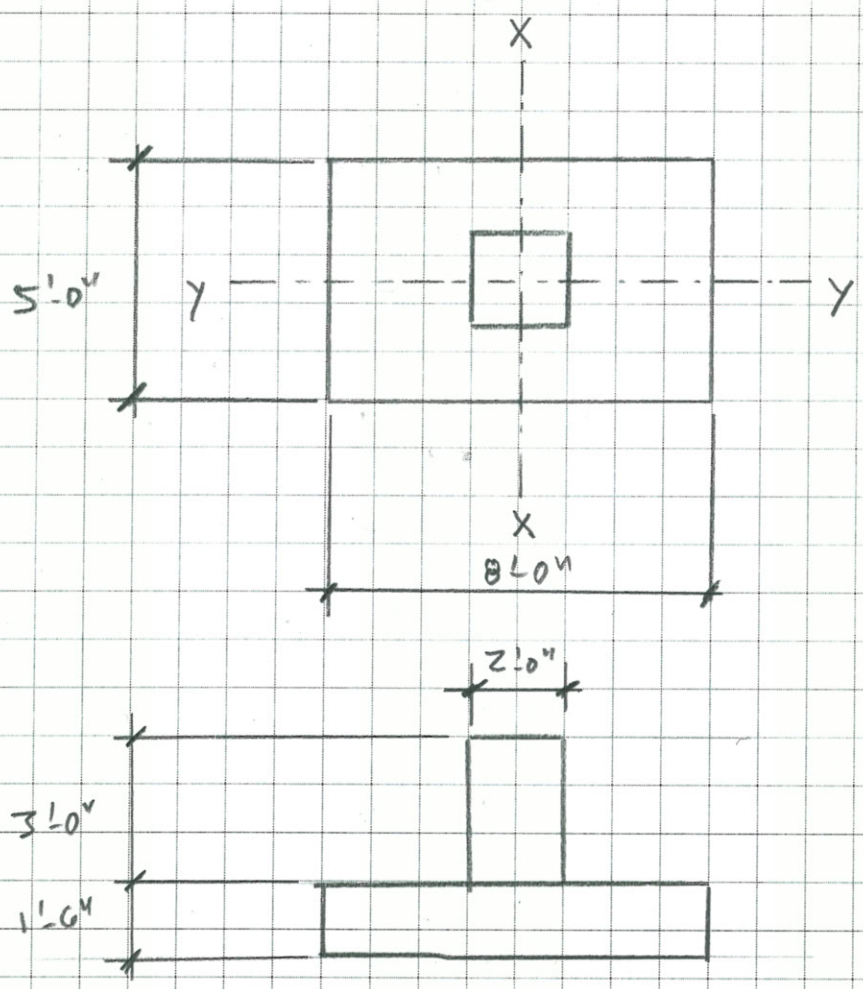
Reference



$W_f = (8)(5)(1.5)(0.150) = 9 \text{ k}$

$W_p = (2)(2)(3)(0.150) = 1.8 \text{ k}$

$W_s = [(8)(5) - (2)(2)](3)(0.09) = 9.72 \text{ k}$

$W = 20.52 \text{ k}$

$A = (8)(5) = 40 \text{ ft}^2$

$S_x = (5)(8)^2/6 = 53.33 \text{ ft}^3$

$S_y = (8)(5)^2/6 = 33.33 \text{ ft}^3$

Pier $V = (2)(2)(3) = 12.0 \text{ ft}^3$

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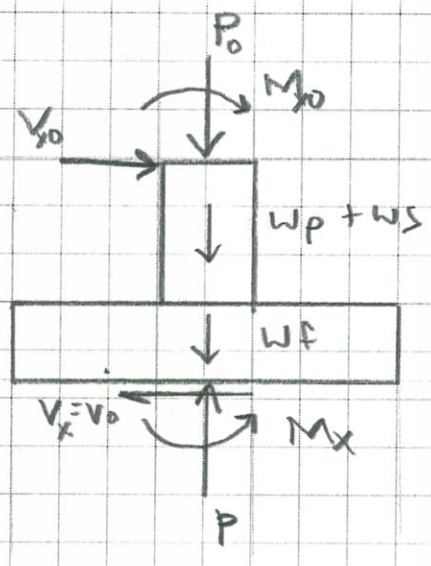
Reference



D: $P_0 = 15$ k, $M_{x0} = 0$ k, $V_{x0} = 0$ k

L: $P_0 = 30$ k, $M_{x0} = 0$ k, $V_{x0} = 0$ k

W: $P_0 = -10$ k, $M_{x0} = 15$ k-ft, $V_{x0} = 3$ k

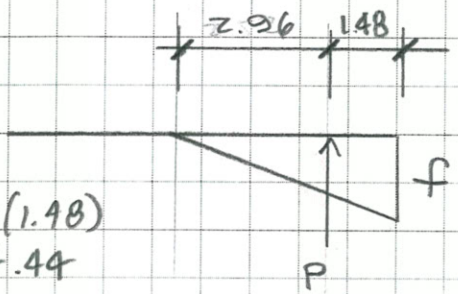
0.6D + W

$P = 0.6(15 + 20.52) - 10 = 11.31$ k

$M = 3(4.5) + 15 = 28.50$ k-ft

$V = 3$ k

$e = M/P = 2.52$ Outside Kern



$N = (3)(1.48) = 4.44$

$\frac{(4.44)(5.0)}{2} f = 113.10$

$f = 10.19$ psf

Calculation No.	Project No. / Proje__.ame			
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Reference

$D + 0.75L + 0.75W$

$P = 15 + 20.52 + 0.75(30-10) = 50.52\ k$

$M = 0.75(3 \times 4.5 + 15) = 21.375\ k\text{-}ft$

$V = 0.75(3) = 2.25\ k$

$e = M/P = 0.42 < 8/6$ ∴ within kern

$f_{max} = \frac{P}{A} + \frac{M}{S} = \frac{50.52}{40} + \frac{21.375}{53.33} = 1664$

$f_{min} = \frac{P}{A} - \frac{M}{S} = 862\ psf$